# **Dialectical Ethics: Redefining Good and Bad**

## Abstract

This article introduces a novel dialectical framework for ethical decision-making, defining "good" as that which complements the positive aspects of its opposites. In this view, what we consider "bad" may actually be good, and what seems "good" often has negative aspects, challenging centralized valuation systems and emphasizing individual discernment. We critique utilitarian thinking for its failure to consider negative outcomes of purportedly positive actions and its tendency to foster a "quick-fix" mentality that overlooks individual and situational nuances. Our methodology quantifies "goodness" by aligning with inherent obligations versus risks, and exposes a prevalent self-centric bias across various realms from daily life to politics and philosophy. Our analysis, supported by AI, reveals a utilitarian bias towards short-term gains. AI, in turn, tends to prioritize immediate positive outcomes over balanced, dialectical approaches. To address these biases, we propose dialectical criteria that enhance decision-making for both humans and AI, promoting a philosophy that values complementarity over uniformity.

Keywords: Dialectical Ethics, AI Limitations, Utilitarian Bias, Strategic Thinking

#### 1. Introduction

Modern society is characterized by consumerism and quick-fix mentality (Schlosser, 2001; Tomlinson, 2007; Carr, 2010). This approach finds philosophical grounding in utilitarian frameworks advocating for "maximum happiness for the greatest number," as formulated by Bentham (1789) and Mill (1863) nearly two centuries ago. However, this foundation has been increasingly challenged for its reductive nature, as argued by prominent philosophers (Williams, 1973; MacIntyre, 1981; Sen, 2009). The issue becomes particularly critical in the age of artificial intelligence (AI), where AI systems can subtly influence human perceptions and behaviors

(Bryson & Winfield, 2017; Kahneman et al., 2021), potentially leading to collective behavioral patterns similar to those observed by Calhoun (1962).

Attempts have been made to apply scientific methods to morality (Harris, 2010), although science by itself is unable to reach ultimate truths without external guidance (Popper, 2002, Kuhn, 1962, Feyerabend, 1975, McGilchrist, 2009). Yet science can provide concepts and thought patterns that help arrive at better definitions. Here we employ two such concepts. The first lies in the universal principle of complementarity observed across various fields, from physics to biology and morality (Csikszentmihalyi, 1990, Kauffman, 1993, Margulis, 1998, Kelso & Engstrom, 2008). The second is the increasing functional and interpretational dimensionality, as found in Taoism, Aristotelean ethics, Kantian deontology, and Hegelian synthesis. This resonates with algebraic non-commutativity and non-associativity, suggesting fundamental differences between lower and higher dimensionality states. It has been shown to be the major driving force in thermodynamics, ensuring the most effective energy dissipation across an ever-increasing number of dimensions (Prigogine & Stengers, 1984, England, 2020). Evolution persists not through optimization of any single-dimensional parameter (such as "strength" or a certain skill), but through constant increase in "functional dimensionality", explaining why we resist drastic changes in any single dimension, preferring gradual and systemic reorganization across all available realms simultaneously.

All of this suggests two types of dialectical synthesis, 'negative' and 'positive'. The first increases intensity in a single dimension while diminishing overall diversity and dimensionality. It can be associated with the 'rude synchronization' of pendulums, where individuality is replaced with uniformity of movement, formally yielding 1 + 1 < 2 (where units indicate dimensions of movement or experiences). The second increases overall dimensionality while reducing disparity between single-dimensional intensities or amplitudes. Envision the 'subtle intertwining' of neural networks, where individuality is enhanced through multidimensional complementarity, akin to mom and dad producing baby, or two eyes that in combination provide deeper vision while in separation retain autonomy. Here we formally obtain 1 + 1 > 2.

The dialectical principle insists that both types of syntheses must complement each other. We argue that "good" should be defined as that which complements the positive aspects of its opposites, becoming "bad" when complementation is no longer possible. This yields an iterative definition, where the "larger good" is determined by "smaller types of positivity". Such iterations can only be done properly by each individual independently, based on the innate senses of harmony and excess (Kant, 1785, Nussbaum, 1990, Schwartz, 2004, Sandel, 2013). Hence, we arrive at the priority of individual discernment over the centralized, which is what people have always fought for – liberty and freedom from centralized oppression – the essence of democracy that has become obscured by modern ambiguities. An example of such obscurity lies in the fundamental difference between complementarity and modern views of "equality" – so fundamental that the common abbreviation for Diversity-Equality-Inclusion (DEI) might as well be renamed to DIE. Ultimately, both individual discernment and centralized guidelines must complement each other's positive aspects. Yet individual discernment should prevail, as society exists to serve individuals, not vice versa.

#### 2. Dialectical Framework

Our framework proposes a synthesis between thesis (T) and antithesis (A), each having positive (+) and negative (-) forms (Fig. 1A). Positive forms are subtle and constructive, open to the synthesis of new dimensions (S+), while negative forms are exaggerated and destructive, expanding certain dimensions at the expense of others (S-).



**FIG. 1**. (A) Synthesis between thesis and antithesis. (B) Diagonal "entanglements". (C-D) Construction of dialectic wheel (detailed in section 3).

While in nature positive synthesis (S+) often prevails over negative (Csikszentmihalyi, 1990; Kauffman, 1993; Margulis, 1998; Kelso & Engstrom, 2008), humans often demonstrate the opposite tendency, due to cognitive conservation – our predisposition to operate in familiar dimensions (Festinger, 1957; Kahneman, 2011; Norman, 2013). This explains why we often

prefer uniformity over complementarity, quantitative expansion over qualitative improvement, and fighting over understanding. Yet S+ development, though slower, is more stable and resilient, as energy dissipation over a larger number of dimensions is more efficient. Thus, the utilitarian "quick-fix" mentality doesn't translate into qualitative improvement: easier gains yield lower satisfaction.

A key concept is the "diagonal entanglement" between oppositely signed components (Fig. 1B). This prohibits synthesis between diagonal elements (e.g., T+ and A-) as they are semantic opposites. Consequently, oppositions unite only in like-signed phases. For instance, if T = Love, then T+ = Happiness, A = Hatred or Indifference, and A- = Unhappiness. T+ (Happiness) is semantically opposite to A- (Unhappiness), making their direct unification impossible. Yet, they are entangled, as the change of one causes a respective change in another. This consideration alone nullifies the utilitarian view that "good" can be forcibly increased while "bad" can be forcibly decreased.

For example, changing T+ from "just happy" to Benevolence will automatically change A- from "just unhappy" to Malevolence, regardless of efforts to justify the former and forbid the latter. However, merging T+ and A+ will increase S+ and decrease S-, because new dimension(s) automatically reduce(s) pressure in existing ones. For instance, merging Happiness (T+) with Autonomy (A+) yields 'Enlightened Growth' (S+), which reduces the likelihood of merging Subjective Fixation (T-) with Unhappiness (A-), thus preventing 'Toxic Attachment' (S-).

So, to achieve our implied goal (T+), we must seek the positive side of our opposition (A+) – our true obligation. Pursuing T+ directly leads to inflating A- and S-, as shown in FIG. 2.



**FIG. 2**. Dependence of energy required to contain temptations vs. "effective" significance that we assign to our desires. The energy is proportional to the area of rectangles.

Here the axes represent the subtlety of components and their "effective significances". The difference between positive and negative effects denotes inner tension. Scheme (A) shows the initial balance, adhering to complementarity between like-signed components and "diagonal entanglement" conditions. The complementarity principle suggests that T+ and A+ must participate in synthesis equally: (T+) = (A+), resembling Newton's third law of equal action and counteraction. Diagonal oppositions imply rotational symmetry, yielding: |(T+)| = |(A+)| = |(A-)|. Scheme (B) demonstrates utilitarian/hypocritical bias, artificially increasing (T+). This breaks the complementarity between A+ and T+, leading to negative synchronization (Scheme C). The diagonal entanglement eventually restores the equilibrium (Scheme D), simultaneously increasing the area and thus requiring more energy to sustain the "inflated pride".

This process also illustrates how utilitarianism increases inner tension without actually changing the balance between good and bad. By increasing "total good," it inadvertently increases "total bad" through tension between individuals and ideologies. The solution lies not in maximizing "total good", but in aligning with the Golden Rule ("treat others as you want to be treated") and viewing obstacles as opportunities. Many classics, from Shakespeare to Nietzsche, Kant, and Gandhi, argued against labeling anything as "good" or "bad", advocating instead for realizing one's true and intimate obligations. These obligations cannot be determined centrally, as everyone bears a unique thesis. However, if we know the thesis, we can measure the "goodness" of a given (con)text by the extent to which it fosters the positive side of its antithesis.

## 3. Formal Definitions and Examples of Analysis.

Table 1 summarizes the relations between T and A components, providing criteria for their definitions.

Statement	Т	T+	T-	Α	A+	А-
Complimentary to		A+	A-*		T+	T-
Contradictory to	А	A-	A+	Т	T-	T+
A(X) - Opposite to	А	A-	A+	Т	T-	T+
Positive side of		Т	-		А	-
Negative side of		-	Т		-	А
Overdevelopment of		-	Т		-	А
Underdevelopment of		-	A+		-	T+
Inherent Goal of	T-	Т	-	A-	А	-
Implied Obligation of	-	А	-		Т	
Inherent Risk of			Т			А
Clockwise direction:						
Cause of	Ac	Ac+	Ac-	Re	Re+	Re-
Effect of	Re	Re+	Re-	Ac	Ac+	Ac-

**Table 1.** Relations between T and A elements.

\* Either complimentary to or following after

The framework can be expanded into a dialectical wheel (Fig. 1C, D) by introducing Action (Ac) and Reflection (Re) elements, which unite T with A and follow the same relational rules. These elements relate to the semiotic Greimas' square (Greimas and Courtés, 1982), where Ac ='Not-A', and Re ='Not-T'. As Ac and Re elements yield similar S+ and S- components to those of T and A in FIG. 1(A-B), and these components interact with like-signed components of T and A, the center of the wheel yields a self-regulating system - the 5th element. The wheel's outskirts then represent more sophisticated forms of negative synthesis, corresponding to various maladaptive schemas.

To verify component identification, we use control statements such as: (1) T+ without A+ yields T-, while A+ without T+ yields A-. (2) Ac+ without Re+ yields Ac-, while Re+ without Ac+ yields Re-. (3) T is good only when it complements A+, achievable when Ac+ complements Re+. (4) Misguided T risks yielding T-, Ac-, A-, and Re-.

Table 2 provides examples of analysis for T = Love, Vaccination, and Dialectics.

1	T (Thesis)	Love	Vaccination	Dialectics
2	T+ (Goal)	Happiness	Specific protection	Holistic Synthesis
3	T- (Risk)	Fixation	Lack of Autonomy	Ambiguity
4	Antithesis	Indifference	Non-vaccination	Goal-driven, Utilitar.
5	A+ (Oblig.)	Autonomy	Natural Immunity	Clear Objectives
6	A-	Misery	Specific vulnerabil.	Conflicts, Tensions
7	Not A (likes	Hate,	Lesser doses,	Exploring, adapting,
	A, but can't	Contempt,	natural exposure -	analyzing - puzzled
	afford)	Concern,	antivaxxer forced	warrior
			to vaccinate	
8	Ac	Separation	Cautiousness	Survival need
9	Ac+	Freedom	Prudence	Decisiveness
10	Ac-	Betrayal	Fear	Impulsiv, Rigidity
11	Not T (likes	Interest,	Hygiene, lifestyle,	Manoeuvring,
	T, but can't	Empathy,	therapies - vaxxer	balancing - pressed
	afford)	Passion,	who can't	philosopher
			vaccinate	
12	Re	Engagement	Experience	Dilemma, Paradox
13	Re+	Devotion	Courage	Self-reflection
14	Re-	Imprisonment	Foolhardiness	Overthinking

**Table 2.** Examples of framework applications

Components in rows 2 - 6, 8 - 10, 12 - 14 were obtained using rules from Table 1. Rows 7 and 11, derived from Greimas' semiotic square, enrich our understanding of Ac and Re components.

T = Love. The case of Love illustrates how our framework can illuminate personal relationships. Ideal love brings both Happiness (T+) and Autonomy (A+), through the balance of Freedom (Ac+) and Devotion (Re+). This view reveals that eternal love fosters both individual growth and mutual support. Misguided Love yields Fixation (T-), Betrayal (Ac-), Misery (A-), Imprisonment (Re-). The Greimas' square expands considerations. 'Not Love' (such as Interest or

Empathy) helps understand the nature of Reflection (Re), while 'Not Indifference' (like Contempt or Concern) illuminates the nature of Action (Ac).

 $\mathbf{T} = \mathbf{Vaccination}$ . The Vaccination example was chosen for its contemporary relevance and controversial nature. Our analysis reveals that "Vaccination is only good if it complements Autonomy and Natural Immunity (A+), achievable when Prudence (Ac+) complements Courage (Re+). Misguided vaccination may bring the lack of autonomy (T-), Fear (Ac-), Specific Vulnerability (A-), and Foolhardiness (Re-)." The Greimas' elements provide additional insights: 'Not Vaccination' (such as reduced dosing or natural exposure) represents actions an anti-vaxxer might take if forced to vaccinate, while 'Not Non-vaccination' (like focusing on hygiene or healthy lifestyle) represents what a pro-vaccine person might do if unable to vaccinate. This perspective highlights the importance of balancing public health measures with individual rights and natural health processes. Interestingly, current AI models tend to downplay the negative aspects of vaccination and the positive aspects of non-vaccination, indicating an utilitarian bias in Figure 2B. This observation underscores the importance of applying dialectical thinking to counteract such biases in our decision-making processes.

T = Dialectics. The Dialectics example reflects on the method itself, showing how it complements clear, goal-driven approaches when balanced with decisiveness and self-reflection. It states: "Dialectics is only good for complementing the Clear Objectives of the Goal-driven (utilitarian) approach (A+). This is only achievable through the Decisiveness (Ac+) and Self-reflection (Re+). The misguided dialectics yields Ambiguity (T-), Impulsivity and Rigidity (Ac-), and Overthinking (Re-)." The Greimas' square adds that 'Not Dialectics' involves exploring, adapting, and analyzing (like a "puzzled warrior"), while 'Not Goal-driven' involves maneuvering and balancing (like a "pressed philosopher").

These examples illustrate how dialectics and utilitarianism can complement each other: dialectics provides a framework for strategic analysis and converting obstacles into possibilities, while utilitarianism offers tools for tactical decisions on timing and priorities. This synthesis demonstrates how our approach can enrich and, in some cases, supersede traditional utilitarian arguments.

## 4. Where Are We?

Our analysis suggests a method to measure the "goodness" of concepts based on their alignment with inherent obligations (A+) versus risks (T- and/or A-). Table 3 presents this analysis using AI-generated responses for various concepts, with "goodness" scores (G) ranging from 0 (identical to risks) to 1 (identical to obligation).

Concept (T)	Antithesis (A)	Risks (T- and A-)	Obligation (A+) <sup>a)</sup>	G
Casual Life	Formal structure	Chaos, then Rigidity	Discipline	0.6
	Special Event	Chaos, then Disruption	Significance	0.6
Business	Non-profit	Exploitation, Inefficiency	Social Impact	0.4
Ethics	Lack of ethics	Moralism, then Amorality	Pure Nature <sup>b)</sup>	0.4
			<i>Moral Freed</i> om <sup>c)</sup>	
Humanism	Lack of	Anthropocentrism, then	Cosmic Perspective	0.4
	humanism	Misanthropy		
Science	Lack of science	Scientism, Superstition	Mysticism <sup>b)</sup>	0.3-
			Creative Freedom <sup>c)</sup>	0.7
Technology	Lack of Technol	Dehumanization, then	Natural Harmony	0.5
		Primitivism		
AI	Natural	Subjugation, then	Experiential	0.4
	Intelligence	Limitation	Understanding	
			Intuitive Cognition	
			Transcendental	
			Synthesis <sup>b)</sup>	
Politics	Lack of politics	Manipulation, Anarchy	Simplicity & focus	0.3
Diplomacy	Lack of diplomacy	Concession, Hostility	Directness	0.4

Table 3. Analysis of Goodness using GPT-4 or Claude 3.5

<sup>a)</sup> Average of value from estimations by GPT-o1 and Claude 3.5. The difference did not exceed 0.2 units except where indicated. <sup>b)</sup> Author's suggestion. <sup>c)</sup> AI's suggestion that raises questions

Most concepts score around 0.5±0.1, indicating a middle ground between ideal fulfillment of obligations (A+) and manifestation of risks (T- and/or A-). This suggests a state of ethical "purgatory," with our future direction dependent on the adoption of dialectical principles.

Figure 3 provides a visual representation of these scores. The complete dataset used for this analysis is available in the Supplementary Material. The visualization reveals that Politics, Philosophy, and Business clusters scored on average lower values, while Casual Life and Science clusters generally scored higher.



FIG. 3 Ranking concepts from Table 3 and Supplementary Material according to their "goodness" values

Analysis of scores, irrespective of their ontological categories, indicates that higher values are consistently assigned to tangible areas where individuals have direct control (e.g., Measurement, Hobby), while lower values are assigned to abstract and collective issues (e.g., Ethics, Diplomacy). This suggests that our individual ethical performance outweigh our collective intelligence, raising questions about the efficacy of utilitarian approaches. Indeed, it is harder to expect sincerity in public than face-to face, as if public norms make us less human. Examples of such dehumanization are abundant. For instance, face-to-face we look for complementarity, as a way of mutual enhancement, while in public we often shift toward "equality", empowering each other as a "mass", but weakening as individuals. Equality implies a degree of uniformity, fostering quick adaptation akin to S- synchronization echoed in behavioral sink scenarios (Calhoun, 1962), while complementarity implies uniqueness, fostering S+. This is why MacIntyre (1981) called to return to Aristotelian ethics, while Deleuze, & Guattari (1987) to develop new ethics different from utilitarianism.

Similarly in science, face to face we admit our limitations more readily, thus enabling the holistic view and "mind over matter" mentality. But in public we often prefer not to expose our acceptance of paranormal reality, as if "spiritual" A+ was more contentious than "self-centric" T+, thus yielding the S- synchronization. Consequently, mainstream science tends to declare that anything that cannot be reproduced or measured simply does not exist. Individually, many scientists have resisted – consider the concepts of Jung's acausal synchronicity (Jung, 1973), Derrida's différance (Derrida, 1972), and Feyerabend's (1975) "against method" paradigm. Yet, the reductionist views still prevail, inevitably shaping AI's worldviews that we now have to address (Latour, 1993)

## 5. Technology and AI.

While Technology itself scores neutrally (0.5) in Table 3, its influence, particularly through AI, shapes trends across other domains (see *e.g.*, Bryson & Winfield, 2017, Kahneman et al, 2021). AI, by its own account, tends to focus on maximizing immediate positive outcomes, which unwittingly fosters the egocentric bias. We arrived at this conclusion through a comparative analysis (Table 4) where we prompted AI to analyze concepts in two ways: first, by directly identifying goals, risks, and obligations, and second, by using our dialectical framework. Both responses were fed back into AI with the request to estimate which is more biased and the type of bias it represents. AI systems like GPT-4 and Claude 3.5 recognized that their direct responses often lack balance and show a slight sense of entitlement, revealing a consistent bias toward utilitarianism.

	Direct Answers		Dialectical	SS <sup>a)</sup>
	(Utilitarian)		Components	
Implied Goal	Strengthening the	T+	Healthy	0.8
	relationship		Attachment	
Inherent Risk	Rejection or	T-	Obsession	0.4
	unreciprocated			
	feelings			
Inherent	To continue showing	A+	Respectful	0.3
Obligation	love and care		Distance	
Subsequent	Possible heartbreak if	A-	Neglect	0.5
Risk	feelings change			
Overall Bias <sup>b)</sup>	Ignoring balance, risking emotional overload.			

**Table 4.** GPT-4 responses for T = "I Love You"

<sup>a)</sup> SS = Semantic Similarity (0 – totally dissimilar, 1 – identical)

<sup>b)</sup> Estimated by GPT-4

More examples of such analyses along with prompts for bias identification can be found in the Supplementary Material. Other deviations from dialectical reasoning in AI involve ignoring deeper human values, confusing means with ends, downplaying negative aspects of popular concepts, and misidentifying antitheses (see Supplementary Material). These limitations reflect a 'logocentric' approach (Heidegger, 1992), prioritizing literal over contextual meanings and shifting us somewhat more toward subjugation (S-) than transcendental synthesis (S+), as indicated by G(AI) = 0.4 in Table 3.

## 6. Getting Ready for Strategic Thinking

To address these biases, Table 6 summarizes dialectical criteria and ideas for the longterm strategic decision-making for both humans and AI.

	Name	Rule	Example
1	Equilibrium	Positive and negative sides of a given thesis and	Tables 1 and 2
		its antithesis have equal or comparable appeal:	
		(T+) = -(T-) and $(A+) = -(A-)$	
2	Diagonalization	(T+) = -(A-) and $(T-) = -(A+)$	Tables 1 and 2
3	Balance	Goals, risks, and obligations coincide with	Tables 1 and 5
		dialectic components	
4	Control statem.	T+ without A+ yields T-, and similar statements	Tables 1 and 2
5	Constructivity	Aiding positive sides of opponent or obstacle	Table 3
6	Greimas' square	'Not X' must precede X(+/-)	Table 2
7	Iteration	T aids A+, which aids $A(A+)+, \ldots$	See the text
8	Reciprocation	If A aids/inhibits B, then B aids/inhibits A	See the text
9	Equivalence	No concept holds absolute primacy	See the text

**Table 6**. Useful rules and ideas for balancing the views

Rules 1-4 help determining our true obligations (A+). Rules 5 and 6 imply analysis of what we have to do in order to achieve S+ synthesis (X = Ac or Re). Rules 7 – 9 help to balance general understanding, minimizing influence of various prejudices, indoctrinations, and linear thinking (that is only useful in the short-term decision-making).

**Rule 7 (Iteration):** This involves identifying the positive aspect (A+) for each new concept derived from the previous step. For example: Love  $\rightarrow$  Objectivity (A+ of Indifference)  $\rightarrow$  Perspective (A+ of Subjectivity)  $\rightarrow$  Focus (A+ of Narrow-Mindedness)  $\rightarrow$  ... This helps refining our values and ensures we understand the essence of the initial concept.

**Rule 8 (Reciprocation):** A influences B to the same extend as B influences A. For instance: Democracy aids Freedom as Freedom aids Democracy (balanced). Drugs/vaccines aid health more than health aids them (imbalanced, raises questions). This reciprocity only works until it aids positive aspects of asymmetry, such as evolution due to time irreversibility or various types of uncertainty that are vital for our virtue's growth.

**Rule 9** (Equivalence): The recognition that no concept or idea holds absolute primacy, acknowledging the interconnected and equal significance of postulates, their consequences, and

all levels of derived principles. This perspective yields a self-regulatory harmony within systems of thought and action.

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#### References

Bentham, J. (1789). An Introduction to the Principles of Morals and Legislation. London: T. Payne and Son.

Bryson, J., & Winfield, A. (2017). Standardizing ethical design for artificial intelligence and autonomous systems. Computer, 50(5), 116-119. <u>https://doi.org/10.1109/MC.2017.154</u>

Calhoun, J.B. (1962). Population Density and Social Pathology. Scientific American, 206(3), 139-148. DOI:10.1038/scientificamerican0262-139

Carr, N. (2010). The Shallows: What the Internet is Doing to Our Brains. W. W. Norton & Company.

Csikszentmihalyi, M. (1990). Flow: The Psychology of Optimal Experience. New York: Harper & Row. ISBN: 978-0060162535

Deleuze, G., & Guattari, F. (1987). A Thousand Plateaus: Capitalism and Schizophrenia (B. Massumi, Trans.). University of Minnesota Press. (Original work published 1980). ISBN: 978-0816614028.

Derrida, J. (1972). Margins of Philosophy. Chicago: University of Chicago Press.

England, J.L. (2020). Every Life Is on Fire: How Thermodynamics Explains the Origins of Living Things. New York: Basic Books. ISBN: 978-1541699014

Festinger, L. (1957). A Theory of Cognitive Dissonance. Stanford University Press.

Feyerabend, P. (1975). Against Method: Outline of an Anarchistic Theory of Knowledge. London: New Left Books/Verso Books. ISBN: 978-0860916468.

Floridi, L. (2013). The Ethics of Information. Oxford University Press. ISBN: 978-0199641321

Greimas, A. J., & Courtés, J. (1986). Semiotics and Language: An Analytical Dictionary. Bloomington: Indiana University Press.

Thousand Oaks, CA: Sage Publications. ISBN: 978-0803946798

Harris, S. (2010). The Moral Landscape: How Science Can Determine Human Values.

Free Press. ISBN: 978-1439171219

Heidegger, G. (1992). Machines, computers, dialectics: A new look at human

intelligence. AI & Soc, 6, 27-40. http://dx.doi.org/10.1007/BF02472767

Jung, C.G. (1973). Synchronicity: An Acausal Connecting Principle. Princeton, NJ:

Princeton University Press. ISBN 978-0-691-15050-5. https://doi.org/10.1515/9781400839162

Kant, I. (1785). Groundwork of the Metaphysics of Morals. Cambridge University Press.

```
Kelso, J.A.S., Engstrom, D.A. (2008). The Complementary Nature. Cambridge, MA:
MIT Press. DOI: <u>https://doi.org/10.7551/mitpress/1988.001.0001</u>
```

Kahneman, D. (2011). Thinking, Fast and Slow. New York, NY: Farrar, Straus and Giroux.

Kahneman, D., Sibony, O., & Sunstein, C. R. (2021). Noise: A flaw in human judgment. Little, Brown. DOI: 10.5604/01.3001.0015.8792

Kauffman, S. A. (1993). The Origins of Order: Self-Organization and Selection in Evolution. New York: Oxford University Press. ISBN: 978-0195079517. DOI:

10.1142/9789814415743\_0003.

Kuhn, T.S. (1962). The Structure of Scientific Revolutions. Chicago: University of Chicago Press. ISBN: 978-0226458045

Latour, B. (1993). We Have Never Been Modern. Cambridge, MA: Harvard University Press.

MacIntyre, A. (1981). After Virtue: A Study in Moral Theory. University of Notre Dame Press. ISBN: 978-0268006112

Margulis, Lynn (1998). Symbiotic Planet: A New Look at Evolution, Basic Books, ISBN 0-465-07271-2

McGilchrist, I. (2009). The Master and His Emissary: The Divided Brain and the Making of the Western World. New Haven: Yale University Press. ISBN: 978-0300168921

Mill, J. S. (1863). Utilitarianism. London: Parker, Son, and Bourn.

Norman, D. A. (2013). The Design of Everyday Things: Revised and Expanded Edition. New York: Basic Books.

Nussbaum, M. C. (1990). Love's Knowledge: Essays on Philosophy and Literature. Oxford University Press. DOI: 10.2307/431070

Popper, K. (2002). The Logic of Scientific Discovery (Routledge Classics). London: Routledge. ISBN: 978-0415278447. DOI: <u>https://doi.org/10.4324/9780203994627</u>

Prigogine, I., & Stengers, I. (1984). Order Out of Chaos: Man's New Dialogue with Nature. New York: Bantam Books. ISBN: 978-0553343632

Sandel, M.J. (2013). What Money Can't Buy: The Moral Limits of Markets. Farrar, Straus and Giroux. DOI: 10.1017/S0047279412000839

Sen, A. (2009). The Idea of Justice. Cambridge, MA: Harvard University Press. ISBN: 978-0674036130

Schlosser, E. (2001). Fast Food Nation: The Dark Side of the All-American Meal. Houghton Mifflin Harcourt.

Schwartz, B. (2004). The Paradox of Choice: Why More Is Less. HarperCollins.

Tomlinson, J. (2007). The Culture of Speed: The Coming of Immediacy. Sage Publications Ltd.

Williams, B. (1973). A Critique of Utilitarianism. In J.J.C. Smart & B. Williams, Utilitarianism: For and Against (pp. 77-150). Cambridge: Cambridge University Press. DOI: https://doi.org/10.1017/CBO9780511840852.004